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Chatbots: A New Digital Teaching Tool Paradigm in Artificial Intelligence (AI) Technology Among Secondary School Teachers

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Abstract

Teachers around the world are committed to improving student-centered learning, intending to enhance the digital teaching tool in the classroom, in tandem with the rapid evolution of technology. In addition, as a teacher, education is one of the sectors that play an essential role in preparing students for the changes, as students begin to recognize what they are learning on the first day of formal education. Consequently, exploring teachers' experience and reviewing the challenges in teaching, is in line with the current digital era. The implementation has significance important in the scenario of Industrial Revolution 4.0 (IR4.0). One of the pillars,

Artificial Intelligence (AI) Technology, which is defined as the ability of a computer or a computer-controlled robot to perform tasks that are normally performed by humans has given a dynamic viewpoint in various fields, especially in teaching. Nowadays, decision-making is simplified by artificial decision-making, which does not require the presence of a human. Asa result, Chatbots as in AI Technology provide a new paradigm for teachers at school, and the mushrooming of digital mediums in education enhances the capability of teaching by using chatbot applications in the lessons. The purpose of this study is to explore Chat Bots in AI Technology as a digital teaching tool amongSecondary School Teachers. The researcher used a qualitative case study guide with the purposive sampling method with three research questions to gather data through semi-structured interview questions and document review. Next, the researcher used manual coding to create themes for the findings. All in all, the informants are sharing the concept, the use, and the challenges based on content representation, the students' interactions in previous experiences, assessments, and feedback. How teachers respond in depth led to the researcher discovering the need for training, professional development, and future classrooms for secondary education.

Keywords: chatbots, digital teaching tool, artificial intelligence technology, secondary school, teacher

1. Introduction

Globalization and the digital revolution have a profound impact on education at all levels. For instance, the secondary school level is a requirement for all Malaysian students. Typically, children spend five years in secondary education. Lower Secondary (Form 1 to Form 3) and Upper Secondary (Form 4 to 5) are the two secondary education levels. Changes in technological development and the competitiveness of the job market have resulted in modifications to the education system, which now equips younger generations with the necessary knowledge and skills to flourish in the current global economy (Ajit et al., 2022). As a middle-income country, secondary education remains a crucial stage for Malaysia to develop its human capital development before it can establish itself as a knowledge-based economy (Arshad, 2013). Schultz (1963) notes that while a primary education may suffice to produce fundamental goods and services, workers with a secondary education can use technology in the workplace, and a tertiary education is essential for the invention and innovation of technology.

Furthermore, teachers around the world are always committed to improving student e-centers of learning, preparing learners for real-world situations, increasing student engagement, and integrating technologies into the curriculum. By referring to the current research, the application of Chatbot technology in education is on the rise (Dokukina & Gumanova, 2019). It aligns with the B3 strategy in Priority B, for Developing Future-Ready Talent in the Twelfth Malaysia Plan (2021-2025), which emphasizes Leveraging Emerging Technology in education. Plus, as in the educational sector, the use of information and communication technology (ICT) plays a critical role in providing new and innovative forms of support to teachers, students, and the learning process. To ensure that all educators and learners reach their full potential and conform to the Industrial Revolution 4.0 achievement and

implementation, the Ministry of Education Malaysia developed the National IR4.0Policy.

The fourth phase of the Industrial Revolution 4.0 demonstrates the maximum capabilities of what arose in the first three phases of the Industrial Revolution. Along with the preparation of the Industrial Revolution 4.0 and continuous professional development in the teaching and learning process, questions have been raised about the function of practicum, proper curriculum, and technological use. Schools should indeed establish unique and productive classroom opportunities by using appropriate and effective learning media. As a result, the schools' role in acknowledging IR 4.0 is essential. Why is this being place for educational purposes? Education and schools are related, with schools serving as institutions where people can acquire knowledge and fulfill curriculum requirements. The teacher is also known as a change agent at school; they play a crucial role in the acceptance and adoption of numerous educational innovations, such as subject restructuring, curriculum revision, technological integration, a practical approach to subjects, making studies pertinent, and student motivation for learning. Teachers' attitudes towards computers, according to Gressard and Loyd (1985), are crucial to the effective use of information and communication technologies in the classroom. They noted that not all educators have a positive outlook on technology and that this could spell trouble for computer-based classroom projects. This is also due to the schools' ability to develop innovative learning media according to the development and willingness of students to develop their digital and technological potential. This development is consistent with the national education philosophy and the six students' aspirations outlined in Malaysia's Education Development Plan.

The teaching Paradigm refers to the shift of method from the Traditional Method to the Modern Method. Incorporating digital learning into the classroom can also take many different forms, from utilizing simple tablets in place of paper to using complex software to replace the traditional usage of a pen (Szymkowiak, et al., 2021). One of the modern methods of teaching is using technology as a medium of teaching. Consistent with the increasingly interconnected digital world, towards which Malaysia is moving, it is necessary to globalize the education system and establish a world-class education system for its children and grandchildren by combining its resources with the best practices from around the globe (News Strait Times, 2019). Online education, mobile app-based education, and web-based education are all examples of how ICTis used in the classroom. ICT allows for more options, adaptability, and appeal. It is a cutting-edge method of education, with an ability to improve students' academic performance. InMalaysia, as in the educational sector, the use of ICT in education has the potential to play a critical role in providing new and innovative forms of support to teachers, students, and the learning process. The use of various instructional technologies by students in the 21st century has helped them learn more effectively (Ghafar & Ghazali, 2022).

As individuals in charge of teaching and guiding pupils in the classroom, teachers need to undertake a paradigm shift related to pedagogy conducted (Mokhtar & Jamil, 2020). Plus, ICT integration entails the use of technological tools to assist teachers in being advanced and efficient teachers while allowing students to learn at their ownpace (Razak et al., 2018). The fourth phase of the IR 4.0 demonstrates the maximum capabilities of what was developed

during the first three phases of the Industrial Revolution. In this preparation for IR 4.0 with the continuous professional development in the teaching and learning process, questions have been raised about the function of practicum, proper curriculum, and technological use. This is due to the school's ability to develop innovative learning processes by the development of digital and technological potential. This development is consistent with the national education philosophy and the six student aspirations outlined in Malaysia's Education Development Plan. Moreover, the effective and long-term transformation of Malaysia's education system indicates that teachers will have the support they need to succeed (Malaysian Education Blueprint, 2013-2025). The web-based chat systems have been available for a while, they are gaining popularity in classrooms as teachers look for new ways to incorporate technology into their lessons. Chatbots for learning are time-efficient alternatives to repetitive processes for instructors because they can operate as teaching assistants when designed to answer questions and artificial intelligence (AI) technology can be used to teach the students by metamorphosing an instructor into a series of managers to replicate a systematic and standardized chat conversation (Nasharuddin et.al, 2021). Chatbots in teaching are in line with the theory of Technological Pedagogical Content Knowledge (TPACK), which states that the integration of technology in teaching is successful when focusing on technology, content, and how teachers teach in class. Besides that, the Self Efficacy Theory (Bandura, 1977) shows how teachers' capability to motivate themselves to accept the changes in teaching by applying technological skills is a catalyst to a meaningful process in teaching.

The integration of ICT into educational settings is becoming more widespread in Malaysia and is causing ongoing shifts in the instructional methods utilized by both educators and students (Hanapiah, 2017). In 2013, Malaysia initiated the construction of schools equipped with electronic and smart technology (Cheok, 2017). The Smart Schools project in Malaysia is an endeavor to expand the use of ICT in schools. The project discovered that 80% of the country's teachers utilized ICT for less than one hour per week and that the majority of this time was spent on word processing (UNESCO, 2013). Besides that, lessons for the 21st century should attempt to create well-rounded persons who are balanced, resilient, curious, principled, informed, caring, and patriotic, in addition to being excellent thinkers, communicators, and team players. This should be the goal of the lessons for the 21st century (Malaysian Ministry of Education, 2012). Next, teaching in the 21st century does not focus on getting students to memorize knowledge provided by the teacher, but on molding students to create and build knowledge, with teachers playing roles as facilitators (Amin, 2016; Jan, 2017; Dakhi et al., 2020). On the other hand, according to Pettersson's (2018) review, previous research tended to ignore the wider contextual elements that affect teachers' integration of technology and instead focused more on teachers' competencies in the use of ICT. It has been suggested that although teachers can grow their competences in the use of ICT, it is necessary to discover ways to distribute effective uses of ICT to support their usage on a wider scale and in driving the change (Agđii, et al., 2019). This is because teachers can develop their competencies in the use of ICT. However, according to a small number of studies, ICT is used in secondary education in Malaysia only on a very limited scale in practice since teachers are reported to have difficulty applying the concept in the classroom while teaching it (Ebrahami, 2018).

Similarly, school teachers in this country have been excruciatingly slow to convert despite the RM663 million expenditure on 1BestariNet, and even with the large floodof new technology for the classrooms, just a few the adopters have embraced novel uses of new technology for almost a decade of 1BestariNet (New Straits Times, 2016). Next, chatbots were one of the first forms of automated programs to be referred to as "bots," and they gained popularity in the 1990s with the rise of online chatrooms (Colace et al., 2018). A chatbot is a program and a human-computer interaction (HCI)model (Bansal & Khan, 2018). AI Technology is called an "intelligent agent" which is capable of performing different tasks (Adamopoulou & Moussiades, 2020). According to Lexico Dictionaries (2019), a chatbot is defined as a computer program designed to simulate conversation with human users, especially over the Internet. Plus, chatbots are useful in a variety of industries such as education, business and e-commerce, health, and entertainment, in addition to emulating human interaction and amusing people (Shawar & Atwell, 2007). The introduction of bots in schools as a tool to supplementtraditional teaching methods can help to update the way schools work in terms of learning; it can help to improve a stagnated school in preset schemes to keep up with a third-century civilization (Colace et al., 2018). Chatbots in education improve interaction, and efficiency, and reduce interaction uncertainty (Ondas et al., 2019). They can readily create a targeted, customized, and result-oriented online learning environment, which is exactly what today's educational institutions require (Cunningham-Nelson et al., 2019).

2. Need for this Study

As a result of the significant role that teachers play in the educational system, the quality of the work that they do is a vital component that should be recognized. Therefore, there is a pressing need for educators to place a greater emphasis on their professional development, which, when put into practice, would result in more efficient instructional methods.

The reason why this study is important is that it allows for an exploration and investigation of concerns that are prevalent among secondary school teachers who participated in this study as informants. Since secondary school teachers are the most prominent authority figures who oversee the process of learning and teaching in schools, it is essential to investigate the topic in depth among these professionals, for instance, policymakers and stakeholders. Education is a necessary component of all societies, and educational research must be prioritized to advance knowledge. Educational research is essential for advancing pedagogy, learning programs, and policy formulation (Thanavathi & Ramya, 2022).

It is hoped that this research will be useful in assisting secondary school teachers and administration in their efforts to further strengthen their teaching and learning process outside of the classroom and most definitely during lesson time at school, particularly in applying knowledge about chatbots in a variety of subjects. It is hoped that this research will be useful in assisting teachers in the application of knowledge about chatbots in various subjects. In addition, the benefits of chatbots in easing the workload of educators as they teach and making use of technology as a tool for the learning process are in high demand since they are in keeping with the requirements of the country as it exists today. Overall, the ingenuity of AI features has made it possible for students to take responsibility for their education, and chatbots have

the potential to be of assistance to both teachers and students inthe educational process.

Researchers both inside and outside the country have discovered that using cutting-edge technology in teaching and learning improves the effectiveness of the learning process. AI assists teachers while teaching. The main aim of AI is to make the work of an educator easier but not to replace them (Jagadesh Kengam, 2021). Teaching quality is a quality in the teaching and learning process that needs tobe made for the sake of disseminating knowledge (Sakarneh, 2014). Teachers should not onlycollect a loosely range of different approaches for different backgrounds of the students and related factors influencing but teachers also can scrutinize and evaluate what can benefit their students through identifying strengths and weaknesses of the lesson before. Withthe combination of machines and teachers, it is possible to pull out the sent results from students (Jagadesh Kengam, 2021). The future in technology offers a wide range of possibilities including education. No matter how industries and ministries invent new policy or revamp it, education plays an important role as the platform for preparing future laborers worldwide. Education is synonymous with the curriculum. It needs to be recognized that a curriculum that genuinely focuses on learners' abilities to act outside of school will necessitate not only a change in curriculum but also a shift in pedagogy (Twining. et al., 2021). A change in pedagogy, on the other hand, will be insufficient if the teacher is not acknowledged and valued as a professional who has an active part in designing the curriculum and how learning is to be measured (Twining. et al., 2021). Following that, recent trends in curriculum development have emphasized developing curriculum in terms of competencies and capacities, as well as the teacher as a key agent in curriculum development (Priestley & Biesta 2013; Sinnema & Aitken 2014). Various comparative curricular analyses have indicated a concentration on twenty-first-century skills and competencies (Creese et al. 2016).

Trends towards school-based curriculum within a central framework (Kärkkäinen 2012) and an outcomes-based educational approach (Biesta et al. 2015) havebeen identified. Many countries have developed curriculum frameworks rather than legislated curricula in response. Such frameworks enable teachers to be more flexible and creative in their interpretation and implementation. For example, Priestley and Sinnema (2014) found that current curriculum policies in New Zealand and Scotland are characterized by flexibility at both national and school levels. Similar to Quebec, where the use of digital technologies in teaching and learning is compulsory, the Ministry of Education's digital action plan measures for how they might be used are offered as suggestions. Ireland also has a Digital Learning Framework, which consists of standards and statements of practice for integrating digital technologies into education (Department of Education and Skills 2017). To choose which statements to emphasize, however, is up to the schools and teachers (Twining et al., 2021). Malaysia has long acknowledged the transition of ICTs in education, as evidenced by the Malaysia Education Blueprint 2013–2025. According to the UNESCO study, Malaysia was one of the first few nations to pioneer a strategic ICT plan for the education system. The review also noted an “impressive array” of policies and plans developed since 1990, including the Smart School Roadmap and the policy on ICT in Education2010. According to the most important aspects of the relevant literature, it is abundantly evident that research on the Teaching

Paradigm of Chatbots in AI Technology as a Digital Teaching Tool among Secondary School Teachers has never been done, even though it is an extremely important topic for academics to investigate.

3. Literature Review

The theories used in this study are the theory of Technological Pedagogical Content Knowledge (TPACK) (Koehler & Mishra, 2009) and self-efficacy (Bandura, 1977). This study, which explores Chatbots as a digital teaching tool among secondary school teachers, is guided by two theories stated in the following paragraph.

3.1 TPACK Model

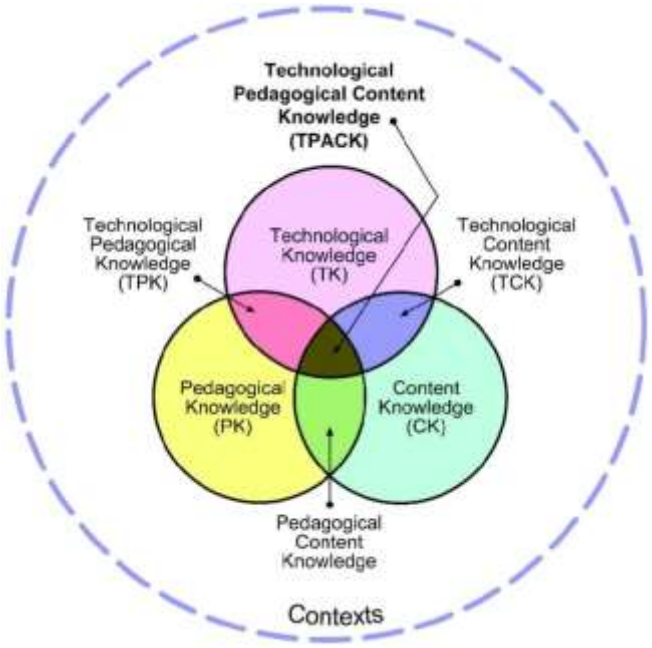

Figure 1.The TPACK Framework and its Knowledge Components (Koehler & Mishra, 2009)

Technological Pedagogical Content Knowledge (TPCK) was presented to educational research as a theoretical framework for understanding teacher knowledge needed for technology integration (Mishra & Koehler, 2006). TPACK (pronounced "tee-pack") replaces TPCK to make it easier to remember and combine technology, pedagogy, and content (Thompson & Mishra, 2007–2008). TPACK is based on Shulman's PCK concept. technology knowledge throughout content and pedagogy. TPACK is new, but the concept is not. Mishra (1998) briefly mentioned the TPCK trinity of content, philosophy, and technology in the context of educational software design. Technology, content, and pedagogy are similarly described by Pierson (1999, 2001), Keating and Evans (2001), and Zhao (2003). Integration literacy (Gunter & Bumbach, 2004); ICT-related PCK (Angelli & Valanides, 2005); Technological Content Knowledge (Slough & Connell, 2006); and electronic PCK or e-PCK (Franklin, 2004; Irving, 2006) have all been studied. Hughes (2004), McCrory (2004), Margerum-Leys and Marx (2002), Niess (2005), and Slough also Connell (2006) also consider content, pedagogy, and technology. TPACK is a framework that illustrates the interrelationships and complexities of technology, pedagogy, and content.

3.2 Self-efficacy

Teachers who create meaningful teaching and learning processes and improve student behavior show self-efficacy. Teachers benefit when they have the ICT knowledge and skills necessary to fully achieve the potential of ICT in the modern educational setting. (Krause et al., 2017).

4. Methodology

4.1 Research Design Approach

The method of qualitative study was chosen since it is best suited to the study's objectives. Moreover, a case study design was appropriate because it examines a real-world, contemporary bound system (a case) over time through detailed, in-depth data collection involving multiple sources of information such as field observation, interviews, audiovisual material, and documents and reports that include a case description and case themes (Creswell & Poth, (2018). A qualitative approach is capable of producing detailed and in-depth information about a phenomenon (Patton, 2001). In the real world, many things cannot be explained solely using numerical data, as in quantitative studies. Many elements related to the natural state of an individual or group, such as emotion, motivation, and empathy, are better investigated through qualitative studies because they cannot be deciphered based on figures in quantitative data (Chua, 2006). The case study design is used to conduct an exploratory examination of a current phenomenon in its situational settings using assorted sources of evidence (Yin, 2003). Plus, a case study focuses on the context of subject, individual, group, and program. As a result, in one or more cases, the issue is examined in a finite system, such as an environment or a context. Other than that, case study research is referred to as a study strategy, a technique, or a comprehensive research approach by certain academics (Creswell, 2007; Merriam, 1998; Yin, 2003).

Case studies are excellent for learning about new behaviors, processes, or knowledge (Mayer, 2001). As a result, this case of the IR4.0 field, with AI Technology as a cornerstone, was chosen to explore new perspectives, particularly in the field of education. Following the case studies, an interview protocol is required to ensure that the interviews are guided and in line with the research objectives and answer the research questions. Yin (2009) defines a case study protocol as a formal document outlining the complete set of procedures involved in the collection of empirical data. It guides researchers in evidence collection, empirical material analysis, and case study reporting (Yin, 1994). Therefore, the interview protocol is developed before conducting the data collection during interviews. A ‘protocol’ or interview guide provides instructions for conducting the data collection procedure and subsequent analysis. The protocol helps to capture a chronological sequence of events throughout the interview (Bruner, 1990; Czarniawski-Joerges, 1995) and grounds the specific topic in the study participant's own experiences (Swap et al., 2001). The technique additionally offers some consistency while performing several interviews. Moreover, particular subjects related to the study issue will be covered in the interviews.

The next stage is checking the validity of the protocol. There are three experts appointed in

this study. In addition to the teacher as an informant, three education specialists are chosen by the researcher based on conversations with the 'informer' and with the approval of the supervisor.They are professionals in technology, multimedia, and the management of teachers, whereby technology is the primary criterion for this specialist to be considered as an expert. They are multimedia and ICT lecturers, District Officers in Selangor, and school principals in Selangor. They reviewed the preliminary interview protocol for this study by sharing opinions and feedback for betterment. All in all, this experience is helpful for the new researcher gaining knowledge and information directly from experts.

4.2 Informant of Study

The informants in this study involved teachers teaching secondary school subjects from Form 1 until Form 5 under the Ministry of Education KSSM syllabus. They were selected using the purposive sampling method based on a set of criteria, namely: (a) teaching secondary school for three years and above and (b) their qualification, teaching expertise, and experience using Chatbots as a tool in digital teaching. To ensure confidentiality, these teachers are labeled as TuC1, TuC2, TuC3, and TuC4 when data is collected and presented. The number denotes the informant's turn, with TuC standing for Teacher Using Chatbots.

4.3 Sampling Technique

This study involves the teachers from secondary school teachers in Selangor, Malaysia until the process of interviewing meets the saturation point. Its purpose is to select information based on the theme by referring to the interview protocol developed to study the phenomena in depth (Liamputtong & Ezzy, 2005). The number of informants is unknown until the researcher meets the saturation point. Although saturation is used as an indicator of effective sample size in qualitative research and is seen in quality criteria of academic journals and research funding agencies, it remains unclear what saturation means in practice (Hennick et al., 2016). However, according to Yin (2011), a case study sample size should not exceed four or five. Merriam (2014) contends that a small number of samples allows researchers to gain an in-depth understanding of the explored phenomena while avoiding statistical generalizations.

4.4 Location

The secondary school teachers in Selangor, Malaysia are chosen as the population of teachers. Selangor is a digital hub of technology in education. According to the Smart Selangor Action Plan to 2025 (SSAP 2025), which the initial ideas formally presented to the public in the Smart Selangor Blueprint 2016, Selangor is an essential state for Malaysia because it is the most populous and economically dominant state. Plus, Selangor is home to nearly all of the 3,000 technology startups in Malaysia. Selangor continues to attract high-quality investments in high-tech manufacturing, including aerospace component manufacturing and maintenance, automated port management, biotechnology, IR 4.0 manufacturing, fintech, and AI technology. Furthermore, Selangor is theresearch capital of South-East Asia and therefore an attractive location and hub for students, instructors, and researchers. Selangor maintains an active knowledge and idea exchange with other relevant international research centers. All of

these advancements are founded on exceptional educational opportunities that look to the future but are grounded in valuable lessons from the past. Therefore, there are no obstacles to conducting a comprehensive study of this population. Considering Selangor and technology are significant, the researcher decided Selangor as the location for this study.

4.5 Data Gathering

The case study method employs several empirical data-gathering strategies to provide thorough responses to the research questions. Semi-structured interviews may be undertaken in addition to meeting observations and document accumulation. Triangulation is enabled by collecting empirical data from multiple sources (Yin, 2009). This combination of multiple empirical sources in a case study is best understood as a strategy to contribute rigor, breadth, complexity, richness, and depth to the study (Flick et al., 2004). Document analysis is frequently used in conjunction with other qualitative research methods as a form of triangulation. It is defined as the combination of methodologies in the study of the same phenomenon (Denzin, 1970). The qualitative researcher is required to draw on a variety of sources, including at least two sources of evidence. The purpose is, to seek agreement and validation by using various data sources and procedures. Interviews, participant or non-participant observation, and material objects are examples of such sources, in addition to documents (Yin, 1994). Moreover, according to Patton (1990), triangulation assists the researcher in avoiding the charge that the conclusions of a study are just an invention of a single method, a single source, or a single investigator's bias. In this study, the researcher uses in-depth semi-structured interviews and documentation to obtain realistic and meaningful data to achieve the objectives of the research.

4.6 Procedure

Before visiting secondary schools in Selangor and interviewing an informant, the researcher must follow the study procedure. To conduct this study, the researcher must acquire formal permission from the Malaysian Ministry of Education's Educational Planning and Research Division (EPRD). Besides that, as a University Putra Malaysia (UPM) Master of Science Candidate, there is an ethic that must be applied before conducting the research, namely the Ethic Committee for Human Subjects Research (JKEUPM). After gaining clearance from EPRD and JKEUPM, the data collection process begins. Next, the pilot study is conducted. Throughout the pilot study, the researcher assumes responsibilities as if he or she were conducting a real field study. Furthermore, the pilot study findings are discussed with the supervisor, and changes to the interview process and document inspection protocol are adopted. Before doing the actual field study, the researcher contacted the 'gatekeeper,' which is the school administration, as well as the study participants, while waiting for approval from the EPRD and JKEUPM to conduct the study. Meanwhile, the researcher takes use of the opportunity to get familiar with the surroundings of the study location, as proposed by Creswell and Miller (2000), so that this component can develop positive interactions and self-adaptation processes in each study location.

4.7 Data Analysis

The goal of data analysis in qualitative research is to find significance with the research objectives. Data processing and analysis, according to Basit (2003), continue throughout the study. Even though even though there is no agreement on the process for assessing qualitative data, most researchers adhere to the common characteristics adopted by previous researchers and authors (Cresswell, 1998). Yin (2009), on the other hand, indicated that qualitative data is heavily dependent on the investigator's style of disciplined factual thinking, in addition to sufficient evidence and comprehensive evaluation of other possible interpretations. In this study, data is collected and regularly analyzed individually until the researcher reaches the saturation point (Cresswell, 2012), where no new information, themes, or categories arise. Next, transcription in qualitative research helps the researcher to organize and analyze data systematically (McLellan et al., 2003). The researcher is obligated to avoid modifications and misinterpretations when transcribing data from semi-structured interviews. Data is managed using a Microsoft Word Processor. The interview is conducted in either Malay or English, depending on the informant's willingness to use either. If the interview is in English, the researcher can transcribe it verbatim; however, if the interview is in Malay, the researcher must translate it to English.

5. Conclusion

In conclusion, the integration of Chabots as a new digital teaching tool paradigm in Artificial Intelligence technology among secondary school teachers marks a significant milestone in the evolution of educational practices. The study indicates that Chatbots can enhance the teaching experience by providing immediate, personalized assistance, thereby freeing up time for teachers to focus on more complex pedagogical tasks. While the potential for increased efficiency and effectiveness is clear, it is also important to tread cautiously. Ethical concerns, data security, and the need for teacher training are aspects that cannot be overlooked as we transition into this new era of technological advancement in education. Therefore, continued research and collaboration among educational stakeholders are essential for harnessing the full potential of this promising innovation. This not only opens up exciting avenues for enhanced learning experiences but also provides an opportunity to redefine the role of teachers in a progressively digital landscape.

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